

# ANNUAL REPORT FOR 2016



**Shelter Swamp Creek Mitigation Site**

**Onslow County**

**Project: 17BP.3.R.1**

**COE Action ID: SAW-2012-00394**

**CAMA Permit #: 41-14**

**NCDWR Project#: 14-0182**



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North Carolina Department of Transportation  
September 2016

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## **SUMMARY**

The Shelter Swamp Creek Mitigation Site is located on NC 50 in Onslow County near Maple Hill. The site was planted in March 2016 and was designed as mitigation for wetland impacts associated with Project 17BP.3.R.1 Bridge No. 26 over the Shelter Swamp Creek on NC 50.

NCDOT will perform on-site mitigation with the restoration of 0.8 acres of wetland restoration (0.45 acre of herbaceous restoration and 0.35 acre of forested restoration). The restoration was completed via the removal of the existing fill associated with the bridge replacement and the NC 50 realignment. The herbaceous wetland restoration was seeded with a wetland/riparian seed mixture typical of a non-tidal freshwater marsh. The forested wetland restoration was also seeded and planted with hardwood trees. NCDOT shall monitor the site for a minimum of three years or until the site is deemed successful.

The site was planted in March 2016. After the first year of monitoring by visual observation, the Shelter Swamp Creek Mitigation Site shows that the planted species are surviving and the restoration area is re-attaining wetland jurisdictional status.

NCDOT proposes to continue vegetation monitoring at the Shelter Swamp Creek Mitigation Site in 2017.

## **1.0 INTRODUCTION**

### **1.1 Project Description**

The Shelter Swamp Creek Mitigation Site is located at Bridge No. 26 over the Shelter Swamp Creek on NC 50 (Figure 1). The site consists of approximately 0.8 acres of wetland restoration for wetland impacts associated with Project 17BP.3.R.1.

### **1.2 Purpose**

In order for a mitigation site to be considered successful, the site must meet vegetation success criteria. This report details the vegetation monitoring in 2016 at the Shelter Swamp Creek Mitigation Site. Hydrologic monitoring was not required for the site.

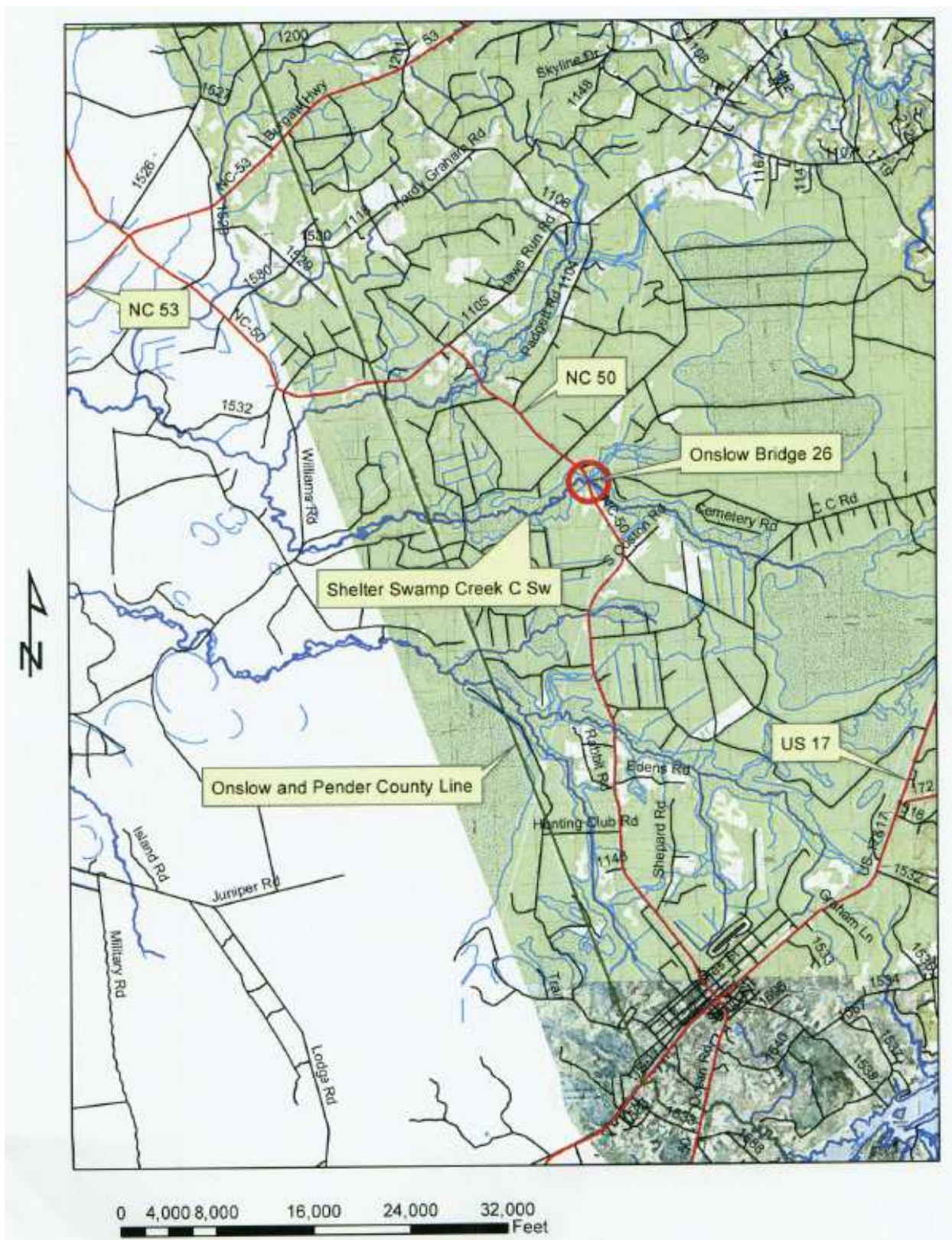
### **1.3 Project History**

March 2016	Wetland Reforestation Completed
August 2016	Vegetation Monitoring (Year 1)

### **1.4 Debit Ledger**

The entire Shelter Swamp Creek mitigation site was used for the 17BP.3.R.1 project to compensate for unavoidable wetland impacts.





**Figure 1.** Vicinity Map

## **2.0 VEGETATION: SHELTER SWAMP CREEK MITIGATION SITE (YEAR 1 MONITORING)**

### **2.1 Success Criteria**

Success for vegetation monitoring within the restoration area is based on the survival of planted woody vegetation and coverage of seeded herbaceous vegetation. NCDOT shall monitor the restoration area by visual observation and photo points for vegetation survival. NCDOT shall monitor the site for a minimum of three years or until the site is deemed successful. Monitoring will be initiated upon completion of the site planting.

### **2.2 Description of Species**

The following wetland species were planted in the Wetland Restoration Area:

*Taxodium distichum*, Baldcypress

*Nyssa sylvatica* var. *biflora*, Swamp Blackgum

*Nyssa aquatica*, Water Tupelo

*Liriodendron tulipera*, Tulip Poplar

*Platanus occidentalis*, American Sycamore

### **2.3 Results of Vegetation Monitoring**

The restoration area is re-attaining wetland jurisdictional status and the planted species are surviving. Planted species noted surviving included Baldcypress, Swamp Blackgum, Water Tupelo, Tulip Poplar, and Sycamore. Other species noted within the planted area included cattail, soft rush, fennel, *Juncus* sp., sweetgum, *Scirpus* sp., woolgrass, and various grasses. Standing water was noted across the majority of the site.

### **2.4 Conclusions**

By visual observation, the Shelter Swamp Creek Mitigation Site shows that the planted species are surviving and the restoration area is re-attaining wetland jurisdictional status.

## **3.0 OVERALL CONCLUSIONS AND RECOMMENDATIONS**

NCDOT proposes to continue vegetation monitoring at the Shelter Swamp Creek Mitigation Site in 2017.

## **APPENDIX A**

### **SITE PHOTOS & SITE MAPS**



# Shelter Swamp Creek



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5  
August 2016



Photo 6



## Shelter Swamp Creek Mitigation Site

Onslow County, North Carolina  
Photo Point Locations

34.614943, -77.587514  
Google earth

NC 50





N

300 ft





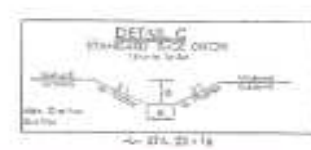
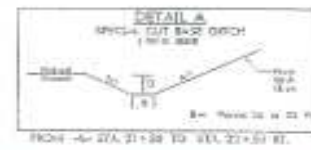
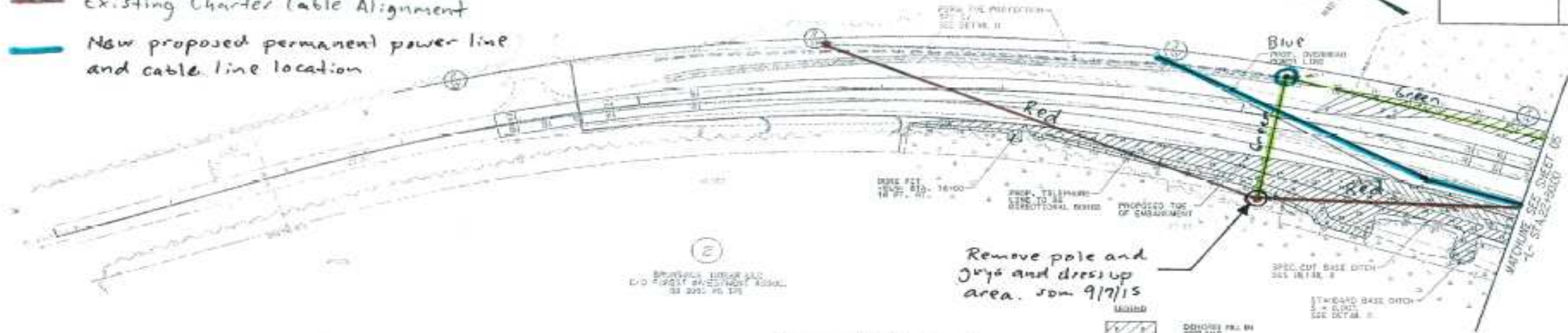
# PLAN

- Blue  Temporary Charter Cable Pole
- Green  Temporary Alignment of Charter Cable
- Red  Existing Charter Cable Alignment
- Blue Line  New proposed permanent power line and cable line location

HNTB

STATE OF SOUTH CAROLINA, P.O.  
BOX 100, COLUMBIA, SOUTH CAROLINA 29202  
HNTB SOUTH CAROLINA, P.O.  
BOX 100, COLUMBIA, SOUTH CAROLINA 29202

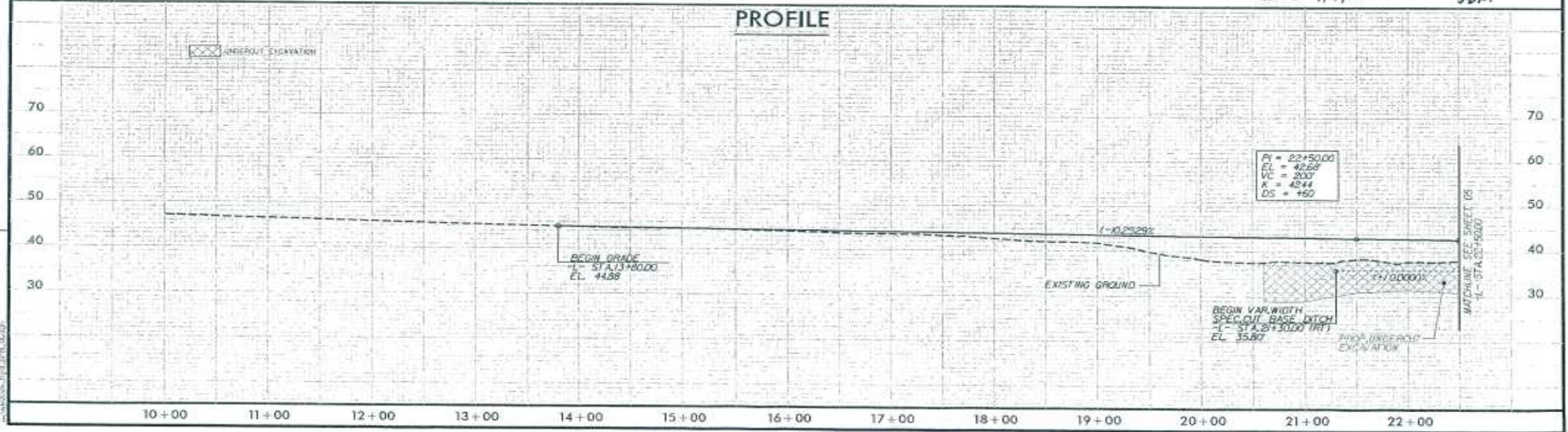
PROJECT REFERENCE NO.	SHEET NO.
1700-101	2
BY DATE	
DESIGNED BY	
CHECKED BY	
APPROVED BY	
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	



-  DENOTES PRELIM. WETLAND
-  DENOTES INTERFERED CLEANSING
-  DENOTES EXCAVATION BY WETLAND
-  DENOTES REMOVED WETLANDS
-  DENOTES REMOVED PERMANENT WETLANDS

Permit Drawing 2 of 25  
2/19/14 sdm  
Rev. 2 Charter Cable 9/23/14  
Rev. 3 9/7/15 sdm

# PROFILE





**PROFILE**

\* Temporary Charter Cable Line would be 25' (twenty-five feet) minimum above the surface of the water of Shelter Swamp Creek.

\* The permanent Charter Cable line would be 40" to 60" approximately below the power line on the same poles as the permanent power line.

**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 2700	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 39.0	FT
BASE DISCHARGE	= 3300	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 39.82	FT
OVERTOPPING DISCHARGE	= 4600	CFS
OVERTOPPING FREQUENCY	= 500 (-)	YRS
OVERTOPPING ELEVATION	= 40.88	FT

DATE OF SURVEY = 1/19/12  
W.S. ELEVATION AT DATE OF SURVEY = 34.6 FT

**END VAR. WIDTH SPEC. CUT BASE DITCH**  
L- STA. 24+25.00 (RT)  
EL. 35.80

**BEGIN BRIDGE**  
L- STA. 24+28.75  
EL. 42.15

**BEGIN VAR. WIDTH SPEC. CUT BASE DITCH**  
L- STA. 26+25.00 (RT)  
EL. 37.90

**END BRIDGE**  
L- STA. 25+54.25  
EL. 40.88

**END VAR. WIDTH SPEC. CUT BASE DITCH**  
L- STA. 29+00.00 (RT)  
EL. 35.27

**END GRADE**  
L- STA. 35+60.00  
EL. 43.02